

### Scaphoid fracture in a patient with pre-existing scapho-trapezio-trapezoid osteoarthritis

Dear Sir,

An 82-year-old right-handed woman presented 4 weeks after sustaining a fall onto the outstretched left hand whilst on holiday in Germany. On her return to the UK the left-sided wrist pain had not subsided, prompting her to seek medical attention. She complained of constant, radial-sided wrist pain exacerbated by activity. There was no history of any other previous injury, although she had experienced occasional activity-related pain at the base of her thumb. She was otherwise fit and well and a non-smoker. On examination there was moderate swelling on the dorsoradial aspect of the wrist. She was exquisitely tender in the anatomical snuffbox and around the trapezium. Thumb movements were painful and restricted.

Plain radiographs showed pan-trapezoidal osteoarthritis particularly affecting the STT joint and a minimally displaced fracture through the waist of the scaphoid (Fig 1). The lateral view showed an extended lunate and scaphoid with a normal scapholunate angle of 60°.



Fig 1 AP radiograph of the left wrist. Arrow indicates scaphoid fracture.

The radioscapoid angle was 30° and the radiolunate angle was -23° (Fig 2).

The patient was placed in a Colles cast and a CT scan was arranged which confirmed a minimally displaced fracture. At 6 months she had clinical and radiological evidence of fracture healing.

The scaphoid is the most frequently fractured carpal bone, accounting for 71% of all carpal fractures (Ring et al., 2000). Scaphoid fractures occur typically in adults between the ages of 15-60 years and are rare in the elderly. STT arthritis is seen in 10% of post-menopausal women often in association with trapezio-metacarpal osteoarthritis (Armstrong et al., 1994). Various other pathological processes are linked to STT arthritis including tendonitis, ganglion formation and dorsal intercalated segment instability (DISI) deformity, as defined by extension of the lunate relative to the radius (Tay et al., 2007). A relationship to scaphoid fractures has not been previously noted.

It is interesting to consider how STT arthritis could predispose to a fracture of the scaphoid. It is likely that the arthritic process involving the distal pole of the scaphoid would have stiffened the STT joint. This in turn may have altered the ability of the scaphoid to rotate when loaded, resulting in increased force transmission across the waist of the scaphoid. Under these



Fig 2 Lateral radiograph of left wrist. Note extended lunate.

circumstances a waist fracture could be more likely to occur than a distal radial fracture, which is the commonest presentation after a fall on the outstretched hand in this age group. It may also be relevant that the scaphoid had become fixed in a relatively extended position with this particular pattern of arthritis, which could also have altered its load transferring characteristics. With an intact scapholunate ligament the lunate would tend to follow the scaphoid into extension, as was seen in this case, and which has previously been reported with STT arthritis. This is in contrast to the more common pattern of lunate extension seen with scapholunate dissociation that results in an increased scapholunate angle.

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### References

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